DOCUMENT RESUME

ED 153 284 CS 502 059

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TITLE Communicative Purpose in Children's Referential Language.
PUB DATE Dec 77
NOTE 18p.; Paper presented at the Annual Meeting of the Speech Communication Association (63rd, Washington, D.C., December 1-4, 1977)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Abstraction Levels; *Child Development; *Child Language; Cognitive Processes; *Communication (Thought Transfer); *Interpersonal Competence; *Language Development; *Perceptual Development; Primary Education
IDENTIFIERS *Communication Research

ABSTRACT

Past research on the development of referential communication abilities in children does not provide a basis for explaining precisely why communicative effectiveness increases. The common assumption is that developments in role-taking facilitate the child's ability to adapt to hearers. A reasonable alternative explanation is that a child's referential messages become clearer as the child's perceptual skills improve and language becomes increasingly socialized. To assess the alternatives, a common set of referent materials was used in two separate tasks given to first and third grade children. One group described referents in a context where no intent was specified, and the other group described referents in a context where an interpersonal communicative purpose was specified. Referential messages were assessed for their clarity, and it was concluded that both age and a specified communication purpose affect the clarity of children's referential messages, but both older and younger children construct clearer messages when their purpose is specified as interpersonally communicative. In addition, females became clearer while males became less clear, on the second trial of the task. (Author/MAI)

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Communicative Purpose in Children's Referential Language

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Presented at the 63rd Annual Meeting of the

Speech Communication Association

Washington, D.C., December 3, 1977

CS502059

Communicative Purpose in Children's Referential Language[1]

For scholars of human communication, one of the most inherently interesting research traditions in child development is found in work addressed to referential communication abilities. To date, it is firmly established that as children get older, they improve in their ability to describe referents in such a way that others can understand their descriptions (Glucksberg, Krauss, and Higgins, 1975). Working from the classic distinctions between egocentric and socialized speech set down by Piaget (1926), investigators have assumed that cognitive maturation underlies the child's eventual ability to use language in ways that are adapted to the point of view of others (Rubin, 1973). Rendering a referent intelligible to another is a clear example of what Piaget intended in his definition of "adapted information" as a type of socialized speech. Adapted information, according to Piaget, occurs when a child genuinely desires to convey something to a hearer and does so in a manner that makes the hearer's point of view central (Piaget, 1926, pp. 42-43).

The cognitive skill customarily associated with socialized speech is role-taking, or the ability to understand the perspectives of others. The precise nature of the relationship between role-taking and referential communication abilities has not been charted specifically (Chandler, Greenspan, and Barenboim, 1974; Johnson, 1977; Piché, Michlin, Rubin, and Johnson, 1975), but there still exists logical appeal to the claim that role-taking, as an interpersonal component of cognitive decentration, weighs heavily in effective communication.

Ostensibly, the numerous studies on the development of referential communication abilities in children deal with those developments as indicating improvements in communication as a result of sensitivity to hearers rather

than improvements explained by increased facility in language use, per se. It is curious that the first explanation has been alledged when researchers have undertaken no systematic investigations of its alternative. The present study is designed to test these two quite dissimilar explanations for developments in the domain of referential communication. The specific research question guiding the investigation is stated as follows: Does a child create clearer referential messages when she/he is instructed to communicate with a specific listener in contrast to when no listener is specified?

Beyond Piaget's rather global distinctions between egocentric and socialized functions of speech, several cognitive skills have been posited to explain developments in interpersonal communication. Vygotsky (1962; originally published in 1934), disagreeing with Piaget's conclusion that young children lack both the cognitive skill and social will to communicate, saw early speech in children as global and multifunctional; specifically, he argued that differentiating speech for self and speech for others is problematic for the young child. The process of differentiating self as hearer from another as hearer is illuminated by Flavell, Botkin, Fry, Wright, and Jarvis (1968) who distinguish between "self coding" and "recoding": "An important part of what is involved in effective communication might be conceptualized as a coding-then-recoding process, in which the recoding component is 'monitored,' so to speak, by role-taking activity" (p. 8). These authors further speculate that effective recoding is not a matter simply of differentiating self from other but also includes suppressing self understanding as the communicative touchstone during the recoding process (p. 9). Stated another way, a child may understand that perspectives exist, that analysis of the other's perspective is in order, and even know how to carry out the analysis, yet fail "to maintain in awareness the cognitions yielded by this analysis" (p. 208). Such a process depicts

what Piaget meant by lack of cognitive skill, but it is contrary to his imputation of lack of social will.

In cases where a child seems to lack both the requisite cognitive skill and social will to communicate, we would assume that constraints occur because there is no understanding that perspectives exist, or because the presence of such understanding does not imply analysis of the other's perspective. Regarding referential language, the referential function in this case would serve intrapersonal rather than interpersonal purposes.

The theoretic explanations of Flavell, et al. are tested most directly in investigations by Asher and his associates. These researchers adopted the procedures of Cohen and Klein (1968) who developed a password type game in which subjects are presented with similar word pairs and asked to provide a clue for one of the words designated as the referent so that a listener can select the referent word from the pair (e.g., ocean-river, in which "ocean" is the referent).

Asher and Parke (1975) established that for children in second, fourth, and sixth-grades there was a significant effect by age on the ability to compare similar words (e.g., baseball-football) in an attempt to provide the listener with a clue for the referent. This age effect was not found when word pairs were dissimilar (e.g., house-tomato). Asher (1976) found that the ability to evaluate the quality of messages constructed by others also increases with age.

If one assumes that a child's deficiencies in describing referents are fundamentally influenced by the greater egocentrism of the younger children (i.e., that they do not distinguish between self and other as hearer and consequently do not adequately recode), the performance of younger children should improve if the children are asked to identify referents from their own messages.

Glucksberg, Krauss, and Weisberg (1966) reported that for four and five-year-olds, performance as hearers in a referential task was virtually perfect when self-encodings were used. Asher and Oden (1976) questioned these findings because each child was placed in the hearer condition immediately following her/his role as speaker. They speculated that the results were due to memory alone. Their procedure included a two-week delay period between child as speaker and child as hearer, and they found that children who produce unclear referential clues make no better sense of their messages than do other people. Asher and Oden conclude that the young child's handicap is not global egocentrism but, rather, the inability to compare referents to nonreferents.

Asher and Oden's conclusion is questionable if the reputed nature of egocentrism is considered. Specific centration processes are not necessarily stable over time. Centration, in any form, denies perspective beyond the self and, additionally, may be temporally bounded. There is no reason to assume that what is centered on at one point in time persists as the basis for later centration with respect to the same referent. For example, the words "ocean" and "river" may be poorly contrasted at one time because the child centers only on the attribute of water; at another point in time the child may again poorly contrast the terms, but this time because the centration process isolates only the attribute of fish. Asher and Oden assume that short term memory biases results whereas long term memory and/or specific perceptual persistence does not. Although the present study does not address this issue directly, Asher and Oden's conclusions as they relate to the present work must be qualified. They do not disprove that egocentrism is central as an explanation for poor referential communication performance.

In both theoretical literature and research reports dealing with language use that is functionally referential, the ends are to further our understanding

of the young child as an interpersonal communicator. It is assumed that any differences found indicate differences in the ability to make oneself understood. Tasks usually involve game-like procedures that include another individual or ask the child to imagine that another is present. Instructions take the form of, "You are to describe these blocks [designs, faces, words, etc.] so that the other person will know which one you are talking about." Whether differences in task performance are explained in terms of differences in the degree to which children at various ages are nonegocentric or are explained as reflecting increasing abilities to compare referents to nonreferents, the explanations turn back on the child as an interpersonal communicator. The developmental picture painted is one featuring the child as increasingly able to attend to the needs of the hearer.

To refine our understanding of the concomitants of referential communication ability, alternative explanations for gains in this ability must be entertained. As children mature, their perceptual acuity increases and more complex syntactic structures and lexical differentiation occur. Perceptual and language maturity, rather than interpersonal sensitivity, may weigh heaviest in the development of referential communication ability. Older children may simply perceive and construe referent material differently regardless of any stated or implied interpersonal purpose. Piaget (1926), for example, argued that the impact of the social world on thought differs for young children and adults: "The adult even in his most personal and private occupation . . . thinks socially" (p. 59). If this is the case, language use should, as a matter of course and without considerable conscious effort, become increasingly comprehensible to others regardless of interpersonal purpose, unless, of course, the speaker's intent is to deceive. In the schema of Flavell, et al., self-coding should become less egocentric and more socialized because perceptual abilities are

more developed, and concept categories are less egocentric. Saltz and Soller (1972), for example, found that the differences in concept application between children in kindergarten, third, and sixth-grades represent a progressive move toward intersubjective similarity.

There is, then, an unresolved issue in the literature on referential communication development. It is not clear whether children improve because they become more able to adapt to hearers and consciously apply that ability or because their language simply becomes more socialized. The present study assesses the validity of audience sensitivity and adaptation versus perceptual and language development as primary explanations for the improvements in referential communication that accrue with age.

To test the alternate explanations, two groups of primary school age children, with children of different ages in each group, were presented a standard set of stimulus materials. One group described the stimulus materials in a context that was explicitly one of interpersonal communication, while the other group operated in a context where the interpersonal communication purpose was minimal. Adult hearers judged all messages generated by the children to determine their referential clarity. If children indeed become more listener sensitive as they get older, and if this is the primary explanation for their superior performance on referential communication tasks, there should be significant differences between not only the performance levels of different age groups but also the performance levels of children at the same age but in different task conditions. If changes in perceptual discrimination and language use as a result of maturation are the primary explanation for superior performances by older children, then the judged referential clarity of messages generated from a common set of items should differ with the age of the children but remain somewhat constant for the same age group across the two conditions.

Method

Subjects

The subjects were first and third-grade, white children drawn from middle class communities in Massachusetts and Minnesota. The subjects for Condition 1, designated "Purposeful Communication," included 32 first-graders (16 girls and 16 boys, ages 6-2 to 7-3) and 32 third-graders (16 girls and 16 boys, ages 8-3 to 9-3). The subjects in Condition 2, designated "Description," included 25 first-graders (14 girls and 11 boys, ages 6-3 to 7-2) and 19 third-graders (10 girls and 9 boys, ages 8-3 to 9-1). All children were tested in a quiet room at school during the afternoon hours.

The Peabody Picture Vocabulary Test (Form B) was administered to all children to determine level of verbal ability. Mean IQ scores by condition and grade level were: (1) Condition 1, grade 1 = 111.875; (2) Condition 1, grade 3 = 109.656; (3) Condition 2, grade 1 = 117.040; and (4) Condition 2, grade 3 = 117.474. The IQ scores for children in the two conditions proved to be significantly different, t (106) = 2.397, $p < .01$.

Materials

The referent material consisted of six blocks, each of which contained a different low codable design. The materials were originally constructed by Glucksberg, Krauss, and Weisberg (1966) and were used by Krauss and Glucksberg (1969) to assess the referential skills of young children.

Speaker Task

Condition 1. Children in the "Purposeful Communication" condition were paired with same sex partners. Each child in the study was designated the "speaker," and the partner was designated the "hearer." The speaker and hearer were given duplicate sets of the six referent blocks. The speaker was instructed that the object of the game was to describe each block so that the hearer could

select it from the array of six, the object being to build two matching stacks of blocks. After the first trial, stacks of blocks were compared, a prize was given, and the speaker was instructed to play the game again and "to try to do better" or, in the case of perfect correspondence, "to try to do as well." The order in which the blocks were presented varied in the two trials, but the order for each trial was constant for all subjects.

Condition 2. Children in the "Description" condition were presented with the six blocks one at a time and were instructed as follows: "This block has a design on it. Try to say what the design looks like." There was no designated listener, and no instructions were given to indicate that the descriptions should be understandable to another person. At the end of the first trial, the speaker was instructed to "do the blocks again." Order of presentation for the two trials was identical to that in Condition 1.

Assessment of Referential Clarity

The investigator developed a set of decision procedures to distinguish referentially clear and referentially unclear messages.[2] A referentially clear message was defined as one that unambiguously refers to one of the blocks and is not dependent on the context of the other five blocks for the clarity of the description. For example, suppose that two of the blocks contain, but are not limited to, two triangle-like shapes. The description, "two triangles," would not qualify as a referentially clear message because the description by itself could refer to either block.

Referential clarity was scored by making an either-or decision for each description of a referent block ("yes" if the description was clear, "no" if it was not clear). The calculated referential clarity score for each trial was the number of "yes" responses determined by the coder, and thus the score on a trial could range from zero to six. Using Scott's Pi (Scott, 1955), intercoder reliability using two coders was .83.

Results

Of primary interest in the present study is comparison of the referential messages of children in the "Purposeful Communication" condition and the "Description" condition. A 2 x 2 x 2 (Condition x Grade Level x Sex) analysis of covariance (IQ score as the covariate) with repeated measures served as the basic design. The two levels of condition represent variables at the task level, while the two grade levels, first and third, are related to developmental aspects. The sex variable is included because prior research on referential communication accounting for this variable is neither consistent nor conclusive (Johnson, 1977).

Analysis of covariance on the referential clarity scores yielded significant main effects for two factors. Children in the "Purposeful Communication" condition produced clearer messages than those in the "Description" condition, F (1, 106) = 4.834, $p < .04$. Across the two task conditions, the performance of third-graders was superior to that of first-graders, F (1, 106) = 18.426, $p < .001$. Sex of subject did not significantly differentiate referential clarity scores, and there were no interaction effects. IQ as a covariate was statistically significant, F (1, 106) = 4.042, $p < .05$, which establishes that verbal intelligence influences a child's ability to describe referents with clarity. Both unadjusted and adjusted cell means are reported in Table 1.

The repeated measures design allows comparison of referential clarity scores on the two trials. There was no main effect for the trials factor, but the interaction between trials and sex approached statistical significance, F (1, 106) = 3.596, $p < .07$. In both conditions and grade levels, females tended to improve in referential clarity on trial 2, while males tended to create less clear referential messages on trial 2. Adjusted cell means relevant to these findings are reported in Table 2.

Discussion

Analyses in the present study support prior claims that as children mature, they construct referential messages that are clearer and more easily understood by others. The data go beyond that claim by providing a basis for explaining what the child is doing when confronted with a referential communication task. Regardless of age, children produce clearer referential messages when the context is communicative. Focusing the child on a specific interpersonal purpose does seem to make a difference in the messages they create when describing referents. The study therefore establishes not only a developmental trend but also a sound basis for rejecting the Piagetian assertion that children under the age of seven lack the social will to communicate with others. If this assertion were tenable, a significant interaction between condition and age level would have been found. No such interaction existed. We must conclude that even the first-grader whose abilities to describe referents are somewhat constrained is sensitive to hearers and tries to adapt her/his messages to their needs. The child at this age seems to possess the social will to communicate with others even though recoding processes are not yet adequately developed.

No obvious explanation exists for the trend for females in both conditions and both grades to improve the referential clarity of messages on a second trial of the task when males do just the opposite. A close content analysis of the precise nature of referential messages might clarify the trend for the Sex x Trials interaction.

The results of the present study favor the assumption that tasks such as the one used in the "Purposeful Communication" condition indeed measure more than just perceptual and language development. One problem remains. The interpersonal dimension was defined as involving a real listener, one whose

presence is known and whose understanding can be gauged immediately after the task has been completed. Real listeners have not always been provided in research designed to assess referential communication (Heider, 1971; Krauss and Rotter, 1968). Comparison of interpersonal situations where the listener is present with those situations in which the listener is to be imagined would be useful in determining the minimal conditions necessary to evoke the social will to communicate with others.

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Footnotes

[1] The author wishes to thank Sheila Watson for her assistance in administering the referential language task and Donald Rubin for his comments on an earlier version of the paper.

[2] A complete description of scoring procedures used in the assessment of referential clarity is available from the author upon request.

Table 1

Unadjusted and Adjusted Means for

Referential Clarity Scores by Grade and Condition

Grouping Variable	Unadjusted Mean	Adjusted Mean
Condition		
Purposeful Communication	3.492	3.543
Description	3.329	3.033
Grade		
First Grade	2.836	2.810
Third Grade	3.770	3.766

Table 2

Adjusted Means for

Referential Clarity Scores by Sex and Trial

Trial	Females	Males
1	3.189	3.370
2	3.424	3.169